

### **Remarks**

Applicants respectfully request reconsideration of the above-identified application. Claims 1-32 and 34-59 remain in this application. Claim 1 is amended to incorporate the subject matter of claim 33, which has been canceled. Claims 17, 25-26, 35, and 39-59 have been withdrawn.

#### **I. Election/Restriction**

Applicants affirm that they elect without traverse the following species: a film comprising at least three layers (claim 18), at least about 50% visible light energy (claim 24), and without causing perforation (claim 36).

#### **II. Double Patenting Based on Application No. 10/452,892**

Claims 1-16, 18-24, 27-34, and 36-38 were provisionally rejected under obviousness-type double patenting as unpatentable over claims 1-2, 5, 13, 24, and 30-31 of U.S. Patent Application Serial No. 10/452,892 (corresponding to U.S. Patent Application Publication 2004/0241482). Applicants respectfully traverse this rejection.

The Office Action states that it would have been obvious to obtain the claimed invention “from the teachings” of the ‘892 application. (Office Action mailed Oct. 6, 2005 at page 5.) However, rather than comparing the present claims to the *teachings* of the ‘892 application, a double patenting rejection requires comparing the present claims to the *claims* of the ‘892 application. *See* MPEP §804 II(B)(1)(stating that obviousness-type double patenting requires the *claimed* subject matter of the rejected application to be patentably indistinct from the *claimed* subject matter of the application or patent forming the basis for the rejection – the disclosure of the application or patent forming the basis for the rejection “may not be used as prior art”).

A *prima facie* case of obviousness has not been established to shift the burden of rebuttal to the Applicants because the applied *claims* of the ‘892 application fail to teach or

suggest all of the claim recitations of the rejected claims. For example, the *claims* of the '892 patent application fail to teach or suggest "exposing the packaging film to an amount of radiation energy effective to . . . activate the shrink characteristic of the film," as recited in independent claim 1.

The dependent claims include additional recitations to those of independent claim 1 from which they depend, and therefore are further patentable over the claims of the '892 patent application.

### III. Double Patenting Rejection Based on Application No. 10/725,209

Claims 1-16, 18-24, 27-34, and 36-38 were provisionally rejected under obviousness-type double patenting as unpatentable over claims 1-60 of pending U.S. Patent Application Serial No. 10/725,209 (corresponding to U.S. Patent Application Publication 2005/0119364).

To overcome this rejection, Applicants submit the enclosed terminal disclaimer.

### IV. Rejection Based on the '892 Application

Claims 1-16, 18-24, 27-32, and 36 were rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent Application Publication 2004/0241482 filed June 2, 2003. In response, Applicants submit the enclosed Rule 1.132 Declaration of Grah and Havens to establish that the inventors of the present application -- Grah and Havens -- conceived the subject matter of the '482 publication that is relied upon in the §102(e) rejection. Namely, Grah and Havens contributed the idea of the subsequent irradiation of one or more film layers comprising single wall carbon nanotubes. (See '482 publication ¶¶ 0014-0017, 0029, 0041-0052, and 0138.)

Accordingly, the relevant subject matter asserted to be disclosed in the '482 publication, but which is not claimed in the '482 publication, was derived from the work of the inventors of the present application and is thus not the invention "by another" as required by §102(e).

V. Rejection Based on the '209 Application

Claims 1-16, 18-24, 27-34, and 36-38 were rejected under 35 U.S.C. §102(e) as anticipated by U.S. Patent Application Publication 2005/0119364 filed December 1, 2003 as Application Serial No. 10/725,209.

Applicants have concurrently submitted the enclosed Request to Correct Inventorship under 37 C.F.R. §1.48(a) for the present Application to add Marvin R. Havens so that Michael D. Grah and Marvin R. Havens are now correctly identified as inventors.

Accordingly, the inventive entity of the present Application is the same as the inventive entity of the '209 Application. Therefore, the '209 Application is not prior art under 35 U.S.C. §102(e). (*See* MPEP §706.02(a)I.B. stating that to apply a reference under §102(e) “the inventive entity of the application must be different than that of the reference.”)

VI. Obviousness Rejections

A. Noel and Dupire

Claims 1-7, 13-16, 18-19, 28-32, and 36 were rejected under 35 U.S.C. §103(a) as obvious in view of U.S. Patent 6,355,287 to Noel combined with U.S. Patent 6,331,265 to Dupire. Applicants respectfully traverse the rejection as conceivably applied to the amended claims.

Noel teaches that “two or more thermoplastic films or sheets” may be heat-sealed or joined together “by heating areas in contact with each other to the temperature at which fusion occurs, usually aided by pressure.” The heating can be performed, for example, by infrared radiation. (Column 5, lines 51-62.)

Dupire teaches incorporating carbon nanotubes in a polymer and further orienting the nanotubes to reinforce the polymer by solid state stretching. (Column 2, lines 27-41.) The reinforced polymer is useful, for example, to make fibers and filaments. (Column 3, lines 11-13.)

Amended claim 1 recites that the exposing step “structurally disrupt[s] at least a portion of the single-walled carbon nanotube material.” The combination of Noel and Dupire fail to teach or suggest this recitation.

Dependent claims 2-7, 13-16, 18-19, 28-32, and 36 include further recitations to those of claim 1 from which they ultimately depend, and are therefore further patentable over the combination of Noel and Dupire.

B. Noel, Dupire, and Dunn

Dependent claims 8-12, 20-24, 27, and 36 were rejected under 35 U.S.C. §103(a) as obvious in view of Noel combined with Dupire and U.S. Patent 4,871,559 to Dunn. Applicants respectfully traverse the rejection as conceivably applied to the amended claims.

Dunn teaches food preservation by inactivating microorganisms using pulses of radiation in the ultraviolet, visible, and infrared frequencies. (Abstract; column 9, lines 42-58.)

A *prima facie* case of obviousness requires that the applied prior art references teach or suggest *all* of the claim limitations. MPEP §706.02(j). Dunn fails to supplement the above-noted shortcomings of Noel and Dupire with respect to amended independent claim 1; namely, Dunn also fails to teach or suggest that the exposing step “structurally disrupt[s] at least a portion of the single-walled carbon nanotube material” as recited in amended claim 1. In fact, Dunn does not even suggest any methods of shrinking a film.

Further, a *prima facie* case of obviousness requires that the prior art provide a reasonable expectation that the proposed modification will succeed – the reasonable expectation of success must *not* be based on Applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (cited by MPEP §2142).

In the present case, the proposed combined prior art fails to provide any reasonable expectation that Dunn’s pulsed light would successfully heat seal together the Noel films -- regardless of whether Dupire’s nanotubes are incorporated into Noel’s sealing layers. Therefore, a *prima facie* case of obviousness has not been established.

C. Noel, Dupire, Owensby, and Ushirogouchi

Dependent claims 33 and 34 were rejected under 35 U.S.C. §103(a) as obvious in view of Noel combined with Dupire and U.S. Patents 6,188,043 to Owensby and 5,691,101 to Ushirogouchi. Although dependent claim 33 has been canceled, its subject matter has been

incorporated into amended independent claim 1. Applicants respectfully traverse the rejection as conceivably applied to the amended claims.

Owensby and Ushirogouchi fail to supplement the above-noted shortcomings of the combination of Noel and Dupire – namely, teaching or suggesting an exposing step that “structurally disrupt[s] at least a portion of the single-walled carbon nanotube material” as recited in amended claim 1.

Owensby teaches infrared heating carbon black particles to melt a hole in a film. (Column 5, line 66 to column 6, line 5.) However, Owensby fails to teach heating the carbon black particles until the particles are “structurally disrupted” as that term is used in the present Application (*see* Application, page 25, 1<sup>st</sup> paragraph.) Further, Owensby fails to teach or suggest single-walled carbon nanotube material, much less structurally disrupting single-walled carbon nanotube material.

Ushirogouchi teaches photosensitive compositions (i.e. photo-resists) used in the manufacture of circuit boards. (Column 1, lines 9-27.) After the photosensitive composition is applied to a substrate and processed to form a pattern, the remaining photosensitive composition provides an optical function by virtue of the “powder” incorporated into the photosensitive composition. (Column 2, line 66 to column 3, line 7.)

The “powder” may be a light-absorbing pigment. (Column 8, lines 26-29 and 64-67.) Examples of light-absorbing pigments include: carbon pigments, metal oxide pigments, sulfide pigments, sulfates, carbonates, silicates, and phosphates of metals, aluminum, bronze, and zinc powder, and organic pigments. (Column 8, line 65 to column 9, line 15.) Examples of carbon pigments include carbon black, refined carbon, and carbon nanotube. (Column 8, line 65-67.)

Thus, Ushirogouchi teaches that carbon black or carbon nanotube may be used as a light-absorbing pigment. However, nothing in Ushirogouchi teaches or suggests an exposing step that “structurally disrupt[s] at least a portion of the single-walled carbon nanotube material” as recited in amended claim 1.

Accordingly, none of Noel, Dupire, Owensby, and Ushirogouchi teach or suggest an exposing step that “structurally disrupt[s] at least a portion of the single-walled carbon

nanotube material” as recited in amended claim 1. A claimed invention is not obvious in view of a combination of references that does not teach or suggest all of the claim recitations. MPEP §2143.03.

Also, Applicants respectfully submit that a *prima facie* case of obviousness has not been established to shift the burden of rebuttal to the Applicants because the Office action has not pointed to any teaching or suggestion in the prior art that would have motivated one of skill in the art to incorporate Owensby’s carbon black (or Ushirogouchi’s carbon nanotube) into Noel’s heat seal layer in order to melt holes in the film by infrared heating as taught by Owensby. To the contrary, Noel is directed to *reducing* heat seal failure rates (Owensby, column 1, lines 58-66), rather than increasing that failure rate by melting holes in the heat seals.

Further, Dupire teaches the incorporation of carbon nanotubes to *reinforce* the polymer. (Dupire, column 2, lines 40-41.) Structurally disrupting the carbon nanotubes would run contrary to that reinforcement purpose.

And Dupire teaches that while the incorporation of *carbon black* provides no significant improvement in reinforcement properties (e.g., secant modulus) compared to a film without particle additives – the incorporation of *carbon nanotubes* does provide significant improvement in the reinforcement properties compared to films either without particles or with carbon black. The film with carbon nanotube had a three- to four-times improvement in secant modulus compared to the film with carbon black or the film with no particle additive. (Dupire, column 6, line 45 to column 7, line 63; Table 1.)

Thus, Dupire teaches that carbon nanotubes and carbon black are *not* interchangeable substitutes for each other for reinforcement purposes. Yet it is the reinforcement attribute of carbon nanotubes that the Office action provided as the motivation to incorporate carbon nanotube in the Noel sealing layer.

D. Noel, Dupire, Owensby, Ushirogouchi, and Havens

Dependent claims 37-38 were rejected under 35 U.S.C. §103(a) as obvious in view of Noel combined with Dupire, Owensby, Ushirogouchi, and U.S. Patent 5,110,530 to Havens.

Applicants respectfully submit that Havens fails to supplement the above noted shortcomings of Noel, Dupire, Owensby, and Ushirogouchi with respect to teaching or suggesting an exposing step that “structurally disrupt[s] at least a portion of the single-walled carbon nanotube material” as recited in amended claim 1, from which claims 37-38 ultimately depend.

Further, a *prima facie* case of obviousness has not been established to shift the burden of rebuttal to the Applicants because the Office action has not pointed to any teaching or suggestion in the prior art that would have motivated one of skill in the art to incorporate single-walled carbon nanotube in discontinuous regions of a film.

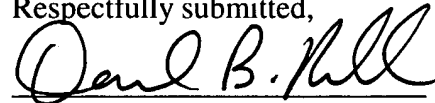
## VII. Conclusion

In view of the amendments to the claims and specification, the correction of inventorship, the terminal disclaimer, the declaration under 1.132, and these remarks, it is respectfully submitted that the present application is in condition for allowance. A notice to that effect is earnestly and respectfully requested.

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Respectfully submitted,



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Date: 3/8/06